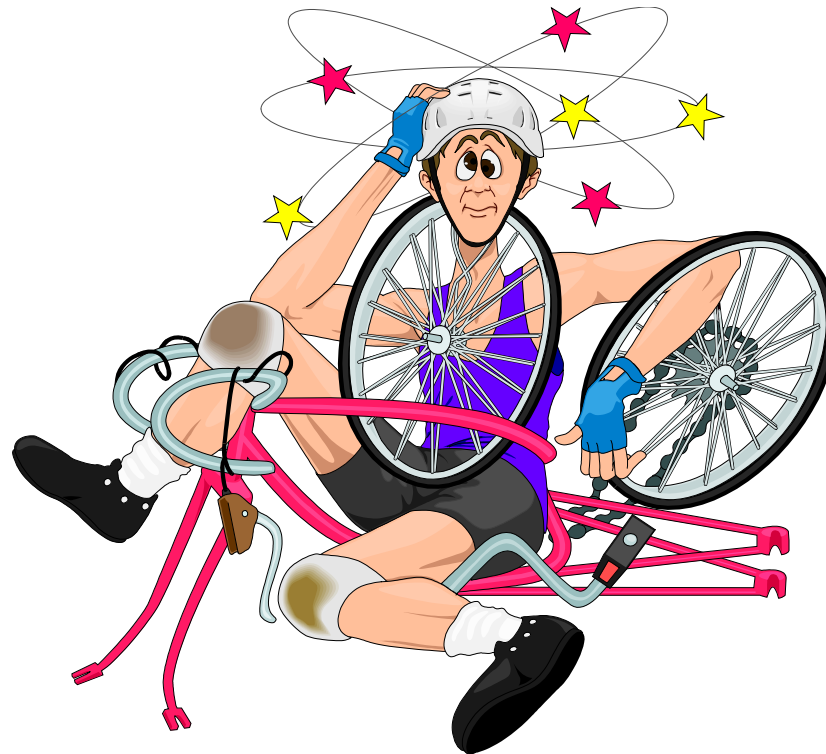


Chapter 14

Severity



Injury Types

K	(fatal)	deaths that occur within twelve months of the crash
A	(disabling)	injuries serious enough to prevent normal activity for at least one day such as massive loss of blood, broken bones, etc.
B	(evident)	non-K or A injuries that are evident at the scene such as bruises, swelling, limping, etc.
C	(possible)	no visible injury but there are complaints of pain or momentary unconsciousness
O	(none)	no injury
U	(unknown)	unknown if any injury occurred

Equivalent Property Damage Only

- A property damage only crash (PDO) means that there were no injuries or fatalities
- The equivalent property damage only (EPDO) is a way of comparing severity types among each other
- A non-injury crash (O) or an unknown injury crash (U) are equivalent to 1.0 PDO crashes (i.e. $EPDO = 1.0$)
- An evident injury crash (B) and a possible injury crash (C) are equivalent to 8.4 PDO crashes (i.e. $EPDO = 8.4$)
- A fatal crash (K) and a disabling injury crash (A) are equivalent to 76.8 PDO crashes (i.e. $EPDO = 76.8$)

Severity Index

The crash severity is equal to the most serious injury sustained by any individual involved in the crash (i.e. a crash that involved one disabling injury and two evident injuries would have a crash severity of 'A').

The severity index (SI) of a crash is equal to the total equivalent property damage only (EPDO) divided by the number of crashes.

A severity index of 8.4 is the threshold for locations that have more serious crashes (i.e. a location with an SI = 9.6 would tend to have more severe injuries than other locations).

Severity index formula:

$$\frac{(76.8 * (K + A \text{ crashes})) + (8.4 * (B + C \text{ crashes})) + (1.0 * (O + U \text{ crashes}))}{\text{total crashes}}$$

total crashes

Severity Index Example

The location being analyzed had one disabling injury crash, three evident injury crashes, three possible injury crashes, and thirteen non-injury crashes. The severity index would be calculated as follows:

$(0 \text{ K crashes} + 1 \text{ A crash}) * 76.8$	$=$	$1 * 76.8$	$=$	76.8
$(3 \text{ B crashes} + 3 \text{ C crashes}) * 8.4$	$=$	$6 * 8.4$	$=$	50.4
$(13 \text{ O crashes} + 0 \text{ U crashes}) * 1$	$=$	$13 * 1.0$	$=$	13.0
				<hr/>
				Total EPDO = 140.2

$$\text{Total crashes} = 1 + 3 + 3 + 13 = 20$$

$$\text{Severity Index} = \frac{\text{Total EPDO}}{\text{Total Crashes}} = \frac{140.2}{20} = 7.01$$

Therefore, this location would tend to have less severe crashes.

Severity Index Exercise

The location being analyzed had two K crashes, two B crashes, one C crash, and five O crashes. The severity index would be calculated as follows: